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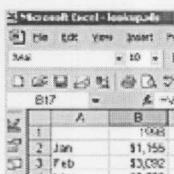
January 1, 2003

Two-Way Lookup in Excel

By Neil J. Rubenking

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I want to use Microsoft Excel to look up a value in a two-dimensional table, looking down the row headers for a match to the value in an input cell and across the column headers for another match, retrieving the value at the intersection of the designated row and column. Picture column A filled with hotel names and row 1 filled with room types. The rest of the table is filled with prices. I want to retrieve the price knowing the hotel and type of room. I tried using HLOOKUP and VLOOKUP but couldn't make them work.

Al Lowe

HLOOKUP and VLOOKUP search the first row or column in a range and return the corresponding value from another row or column. But they don't give any information about the location of the found value. You can't, for example, use HLOOKUP to determine the column for the desired data and then use VLOOKUP to search that column.

The key is to use the MATCH function, which returns the position of an item within an array. In this case, it will be the position of the desired column header in the top row. We can pass this value as the third argument to VLOOKUP— the one that defines which column's data should be returned. Figure 1 shows a simple worksheet demonstrating this function. Cells A2 to A13 contain months of the year, B1 to F1 contain years, and B2 to F13 contain some random dollar values. You enter the desired month and year in cells B15 and B16, and the corresponding value is retrieved by this function:

`=VLOOKUP(B15,A2:H13,MATCH(B16,A1:H1),FALSE)`

This tells Excel to find the month value matching cell B15 and return the value found in the same row at the column corresponding to the year value from cell B16. The FALSE

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argument at the end tells VLOOKUP to return only a precise match.

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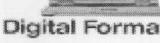
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```

This tells Excel to find the month value matching cell B15 and return the value found in the same row at the column corresponding to the year value from cell B16. The FALSE argument at the end tells VLOOKUP to return only a precise match.

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An Elegant Two-Way Lookup in Excel

May 6, 2003
By Neil J. Rubenking

In a recent User to User piece titled "Two-Way Lookup in Excel" (www.pcmag.com/article2/0,4149,763131,00.asp), you suggested using the MATCH function to identify the correct column and the VLOOKUP function to find the correct cell within that column. But this isn't the best solution; it's more efficient to use the intersection of named ranges.

The reader's question specifically involved a matrix of hotel names and room types, like the example in Figure 2. Select the entire range of data and labels, and use the series of commands Insert | Name | Create. Accept the default Create names in | Top row and Left column to set up the matrix. Then, in any other cell, simply type in a formula such as =Hyatt Single. This provides the same result as the earlier solution but is much more elegant and easy to comprehend.

Jim Byrne

The reader's original question mentioned trouble getting VLOOKUP to work. Our earlier solution made VLOOKUP work but overlooked the more effective solution. For those who don't often use named ranges, we'll spell out the instructions. Select all of the data, including the row and column labels, then choose Insert | Name | Create from the menu. The Create Names dialog will appear, with the Top row and Left column boxes checked by default. Just click on OK to accept the defaults. Now each row and column of data is defined as a named range, and you can use the range name in formulas. Of course, all of the row and column labels must be unique.

Watch what happens when you enter the formula =Hyatt Single. As soon as you finish the word Hyatt, Excel displays a box around the range named Hyatt. When you type the e in Single, it draws another box around the range named Single (see Figure 2). And when you hit enter, voilà! The value at the intersection of those two ranges appears.